COMPARISON OF INCOME INFORMATION
IN THE 1990 CENSUS WITH INFORMATION
IN THE MEDICARE CURRENT BENEFICIARY SURVEY

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INTRODUCTION

Studies using Medicare data have demonstrated the greater use of medical services by Caucasian beneficiaries as compared to African American beneficiaries. Unfortunately, very little socioeconomic information is available in the HCFA database to contribute to HCFA's understanding of the difference in the use of services by the two race groups. The HCFA administrative database does, however, maintain addresses and zip codes for beneficiaries, and the US census collects some socio-economic data at a high level of geographic detail. The purpose of this study is to investigate the usefulness of using census-based income estimates for zip codes, census tracts, and census block groups to estimate income for Medicare beneficiaries 65 years of age and older.

METHOD

The primary data sources for the analysis are Round 1 of the Medicare Current Beneficiary Survey (MCBS) conducted in 1991, and the 1990 US Census of Population and Housing Summary Tape 3A and Tape 3B.

The MCBS is a series of in-person surveys of 12,667 Medicare beneficiaries from 1991 to the present. In Round 1 of the survey, respondents were asked to provide information on their annual income as shown in Table 1, below. This information was then linked to demographic information such as age, race, and institutional status (i.e., nursing home or community dweller). The addresses of the respondents were available from the HCFA Enrollment Data Base, and were verified at the time of interview by the MCBS survey staff. Information on each respondent's income was gained by first asking the respondent to estimate within $5000 his or her annual income, or the joint income with his/her spouse, if applicable. People who could or would not respond to this question were given the opportunity to respond "less than $25,000", or "greater than $25,000". These latter two responses as well as "income not reported" were unacceptable for this study, and those persons were deleted from the analysis. As shown in Table 2 below, 90% of the respondents provided an acceptable response to the MCBS income question.

Table 1
Data Sources and Description

MCBS	1990 U.S. Census
Age Race (black/white) Institutional Status Address including zip code Annual Income category $0-$4,999 $5000-9,999 $10,000-14,999 $15,000-$20,000 $20,000-$25,000 $25,000-$30,000 $35,000-$40,000 $40,000-$45,000 $45,000-$50,000 $50,000+	For each zip code, census tract, and block group: Median income for: All Races, age 65+ All Races, age 65-74 years All Races, age 75+ White persons, age 65-74 Black persons, age 65-74 White persons, age 75+ Black persons, age 75+
Source: MCBS Round 1. RICA and RIC1	1990 US Census of Population and Housing: 1990 Summary Tape 3A and Summary Tape 3B

The respondent's address in the MCBS provides a basis for linking the income information gained through the MCBS to census-based income information. Namely, the respondent's zip code was used to link to zip code-based census information; and the respondent's street address was used to link to census tract- and block group-based information. The block group and census tract identifiers for each respondent were found by "geo-coding" the respondents' addresses. Geo-coding maps an address to a specific geographic location. By comparing this location to the boundaries for block groups, one can ascertain the block group in which an individual resides. Since tracts are wholely composed of block groups, identifying a household's block group is sufficient for identifying its census tract.

Geo-coding was conducted using MapInfo, a commercial mapping software package. As Table 2 shows, only 27.3% of the non-institutional MCBS respondents who provided acceptable responses to the MCBS income survey could be successfully geo-coded. This relatively low rate was due to several factors. The MapInfo software requires that the addresses contain a street number and a street name. The street number is compared against data on valid ranges for addresses along the street, and a geo-code is assigned according to the relative position of the street number in this range. Thus, addresses that specified only P.O. box numbers, or street names without street numbers, could not be geo-coded. This was especially problematic with individuals in rural areas. Note also that geo-coding in this manner implies that in order to identify the census tract for an address you must be able to identify the census block group. Thus, there can be no instances in which a census tract is identified but not a census block group, and vice versa.

The low ratio of successfully geo-coded addresses was also a function of the very strict criteria for a positive geo-coding we employed. The addresses had to match according to complete street name, including suffixes such as "Street", or "Avenue", although considerations were made for certain alternative abbreviations and spellings. For example, we accepted "101 1st St. N" for "101 North First Street" and "101 N 1st St", but not for "101 N 1st Ave". In addition, the street number had to be an acceptable street number in the zip code identified by the respondent. If "101 Lake St" existed in zip code 01234 but the respondent listed his/her zip code as 01235, no geo-code was assigned. As Table 2 shows, 96.8% of the non-institutionalized individuals who provided acceptable responses to the MCBS income question also had a zip code which was in the census file, but only 24.7% could be assigned both a zip code and a census block group code. (Note: one explanation for the failure to find 3.25% of the zip codes for the non-institutionalized MCBS beneficiaries is that the US postal service changes zip code boundaries on an on-going basis. The MCBS addresses were verified in 1990, but the zip code boundary data we employed were based on 1994 zip codes.)

Table 2
Age and Race Characteristics of MCBS Respondents Used in the Analysis

	(1)	(2)	(3)	(4)	(5)
	Total Respondents	Non-institutionalized	Acceptable Responses to MCBS	Acceptable Census Zip code Info	Acceptable Census Tract / Block Group Info
Caucasian					
65-74	3,769	3,711	3,320	3,214	852
		98.5%	89.5%	96.8%	25.7%
75+	5,302	4,690	4,197	4,061	1,024
		88.5%	89.5%	96.8%	24.4%
Total	9,071	8,401	7,517	7,275	1,941
		92.6%	89.5%	96.8%	25.0%
African American					
65-74	365	359	324	314	96
		98.4%	90.3%	96.9%	29.6%
75+	518	472	411	399	87
		91.1%	87.1%	97.1%	21.2%
Total	883	831	735	713	183
		94.1%	88.4%	97.0%	31.0%
Total					
65-74	4,134	4,070	3,744	3,625	948
		98.5%	92.0%	96.8%	25.3%
75+	5,820	5,162	4,608	4,460	1,111
		88.7%	89.3%	96.8%	24.1%
Total	9,954	9,232	8,352	8,085	2,059
		92.7%	90.5%	96.8%	24.7%

Note: the percentages in column three represent the values in column three as a percentage of the values in column two. The percentages in columns four and five represent the values in column four and five, respectively, as a percentage of the values in column three.

From the decennial census, the US Census Bureau compiles information on, among other items, the number of households in each of nine categories for annual household income, by the age and race of the head of household, for each zip code and census tract and block group in the U.S.

From this information, the Pareto median income was calculated for each zip code, census tract, and block group identified in the MCBS survey. The Pareto median is a measure of the central tendency of a distribution of income, and was recommended by the staff at the Bureau of the Census for use in this study. The Pareto median was calculated from the categorical data in the US Census, as described in Appendix 1.

Thus, for each individual in the MCBS whose address was successfully geo-coded, four measures of income were available:

1. self reported income from MCBS,
2. the median income of the zip code in which the individual resided,
3. the median income of the census tract in which the individual resided, and
4. the median income of the block group in which the individual resided.

Statistics were then generated to measure the correlation between MCBS-based and census-based income figures. If high income individuals (as measured by the MCBS response) tend to reside in high income areas (as measured by the census) then health services researchers can, with some confidence, use census-based income information as a proxy for individual information. Moreover, if the block group based income information provides no better correlation to individual income than does the zip code-based information, health services researchers would be wise to forego the substantial effort required to obtain block group identifiers.

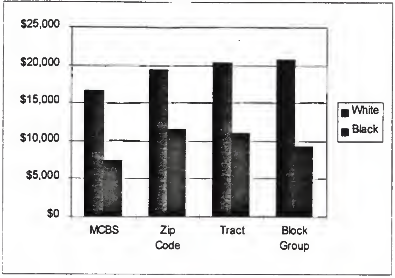
RESULTS

The analysis was conducted on six classes of MCBS respondents:

1. Caucasian individuals aged 65 to 74
2. Caucasian individuals, aged 75+
3. Caucasian indiviudals, aged 65+
4. African American individuals, aged 65 to 74,
5. African Americans individuals, aged 75+
6. African American individuals, aged 65+.

The four pairs of columns in Figure 1 show what the Pareto median income figure for the MCBS respondents would be for white and black respondents, respectively, if the MCBS survey, zip code, census tract, or census block group data were used to estimate the median income of the study population. On average, individuals in the MCBS reported lower incomes in their survey responses than the median income in the zip code, census tract, or block group in which they lived. The Pareto median income for geo-coded respondents according to MCBS is $16,598 for whites and $7,424 for blacks. The zip code, census tract, and block group values are $19,430, $20,396, and $20,802 for Caucasians, respectively. The amounts are $11,519, $11,100, and $9,242 for African Americans, respectively. The difference between the U.S. census and the MCBS is not unexpected given the different questions asked of respondents to the US Census and the MCBS. As mentioned earlier, the MCBS asked a respondent for his/her *personal income* or, if he/she were married, the joint income with his/her spouse. Census, on the other hand asked for the *total income of the household*, and then compiled the household income figure according to the race and age characteristics of the head of household only.

Figure 1
Pareto Median Income for MCBS Respondents by race and source of information



Statistics were then calculated to measure the degree of association between MCBS and census income information. Table 3, below, summarizes the results for each of the age and race categories examined. We conducted two tests of the association between census-based and MCBS-based income measures. In the first test, we organized the census-based median income figures into the same 11 income categories identified in the MCBS survey and calculated Kendall's tau-b statistic for each age and race category. The tau-b statistic measures the degree of correlation between two catagorical variables. It ranges from -1 to 1 and measures the extent to which the observations are concordant or discordant.

Table 3
Correlation between MCBS Reported Income and Median Income for Zip Codes, Census Tracts, and Block Groups

		Zip Codes				Census Tract				Census Block Groups			
		Discrete		Continuous		Discrete		Continuous		Discrete		Continuous	
	n	Tau-b	p	Pearson	p	Tau-b	p	Pearson	p	Tau-b	p	Pearson	p
White all ages	1876	0.311	0.000	0.453	0.000	0.330	0.000	0.445	0.000	0.294	0.000	0.325	0.000
White 65-74	852	0.352	0.000	0.482	0.000	0.375	0.000	0.473	0.000	0.342	0.000	0.347	0.000
White 75+	1024	0.203	0.000	0.284	0.000	0.209	0.000	0.292	0.000	0.190	0.000	0.204	0.000
Blacks all ages	183	0.269	0.000	0.239	0.001	0.183	0.001	0.273	0.000	0.187	0.001	0.289	0.000
Black 65-74	96	0.187	0.009	0.170	0.097	0.108	0.102	0.176	0.091	0.047	0.295	0.185	0.072
Black 75+	87	0.282	0.000	0.156	0.149	0.198	0.009	0.353	0.001	0.300	0.000	0.400	0.000

To insure that the choice of income categories for the census data did not bias the results, we also calculated Pearson correlation coefficients of the MCBS data on the continuous census-based median income figures. That is, we did not group the census data into income categories. For this statistic, the ordinal MCBS data were converted into income estimates by assigning to each respondent an income figure equal to the average income for the income range the resondent provided. For example, if the repondent choose catagory 3--an income range of $10,000 to $14,999--we assigned that individual an income of $12,500. For individuals that responded to the "$50,000 or greater" catagory, we assigned a value equal to the Pareto median income for individuals in that catagory. This was constructed from census data which indentified two higher income catagories: "$75,000-$99,999" and "$100,000 or greater". The census data suggested that the median individual in the $50,000 and above catagory had an income somewhere between $50,000 and $74,999. A procedure equivalent to the Pareto procedure described in Appendix 1 was used to yield an estimates of the median income of individuals in the $50,000 and above catagory for each age and race catagory. These values are given in Table 4 below.

Table 4
Estimated Median Income for Individuals Reporting Income in the "Greater than $50,000" Category

	Age 65-74	Age 75+
Caucasian	$71,200	$71,150
African-American	$67,960	$67,470

We then calculated the Pearson correlation statistics for income constructed from the MCBS survey and median income from the various census sources. The Pearson statistic ranges from -1 to 1 and measures the extent to which individuals who reported higher than average income to MCBS tended to reside in higher than average income zip codes, census tracts or block groups.

The analysis suggests (See Table 3) that census based median income figures are generally positively correlated with MCBS-based income figures for Caucasian respondents, but not generally for African American respondents. Table 3 shows that for each measure of association, and for each age group among Caucasian respondents, the association between census-based and MCBS-based income measures is significantly greater than 0 ($p<0.001$). The results were mixed for African American respondents, although most measures showed weak positive correlation with census-based measures.

Table 5A shows the results of an analysis to determine whether census tract-based income estimates were significantly better estimates of the income of a respondent than were zip code-based measures. This is an important issue since geo-coding addresses to obtain block group identifiers is time consuming, while zip codes are readily available from the HCFA Enrollment Data Base. For age/race catagories individually, the analysis indicates that census tract information is no better correlated with MCBS reported income. The differences in the measures of association are insubstantial and not statistically significant at the $\alpha=0.05$ level.

Table 5B shows the results of an analysis to determine whether block group-based income estimates were significantly better estimates of the income of a respondent than were zip code-based measures. The analysis suggests that, in general, there is no statistically significant advantage to using block-group based income estimates over zip code-based estimates. Since block groups are the smallest unit studied, the variance in the median income figure for block groups is larger than for zip codes or census tracts. Consequently, while there is a greater likelihood of matching respondents in extreme income categories, there is a greater dispersion about the mean and marginally lower overall association. The magnitude of the differences in these discrete measures of association are insubstantial and are generally not statistically different from zero at the $\alpha=0.05$ level.

Table 5A
Comparing Census Tract-based versus Zip Code based Income Estimates as Estimates of MCBS income

	Tau-b Census Tract minus Tau-b Zip Code	p
White 65+	0.019	0.118
White 65-74	0.023	0.164
White 75+	0.006	0.401
Blacks 65+	-0.086	0.069
Black 65-74	-0.079	0.168
Black 75+	-0.084	0.157

Note: Negative numbers imply zip code-based data are more highly correlated with MCBS responses than are census tract-based data.

Table 5B
Comparing Block Group-based versus Zip Code based Income Estimates as Estimates of MCBS income

	Tau-b Census Block Group minus Tau-b Zip Code	p
White 65+	-0.017	0.144
White 65-74	-0.010	0.335
White 75+	-0.013	0.290
Blacks 65+	-0.082	0.079
Black 65-74	-0.140	0.046
Black 75+	0.018	0.590

Note: Negative numbers imply zip code-based data are more highly correlated with MCBS responses than are block group-based data.

Table 6 shows the results of an analysis to determine whether combining zip code-based median income information with census tract or block groups-based information improves the ability to predict an individuals income. For this analysis, ordinary least squared regressions were performed with MCBS-based income figures as the dependent variable and census-based median income information as the explanatory variables. For each age/race catagory, three regression equations were estimated:

a) $\text{MCBSInc}=\beta_0 + \beta_1 * \text{ZipInc}$

b) $\text{MCBSInc}=\beta_0 + \beta_1 * \text{ZipInc} + \beta_2 * \text{TrcInc}$

c) $\text{MCBSInc}=\beta_0 + \beta_1 * \text{ZipInc} + \beta_2 * \text{BGInc}$

where

MCBSInc= income as reported to the MCBS, converted to the average income of the income catagory specified, as discussed above;
ZipInc= median income for the Zip code in which each respondent resides;
TrcInc= median income for the census tract in which each respondent resides; and,
BGInc= median income for the block group in which each respondent resides.

R^2 statistics were calculated for regression equations (a) to (c) above, and F tests were performed to test the hypothesis that equations (b) and (c), respectively, explained no more of the variation in MCBS reported income than did equation (a). This addresses the question of whether we can improve our ability to predict an individual's income by taking into consideration both zip code-based and census tract and/or block group-based information. In other words, this addresses the question: is collecting block group- and census tract-based median income figures "worth it"?

The analysis suggests that, for Caucasians, including census tract or block group information to the readily available zip code-based information provides a small, though statistically significant improvement to our ability to predict an individual's income. For example, column (1) of Table 6 shows that a regression of MCBS reported income on zip code based information alone yields an R^2 of 0.2321. This implies that 23.21% of the variation in MCBS reported income for Whites 65-74 could be explained by knowledge of the median income of the zip code in which each MCBS respondent resides. As shown in column 3, incorporating information on the median income of the census tract in which each MCBS respondent resides only increases the R^2 to 0.2571, or 25.71% of the variation in MCBS reported income.While this difference is significant at the $\alpha=0.05$ level, it is not a large difference. Similarly, as shown in column 5, incorporating information on the median income of the block group in which each MCBS respondent resides only increases the R^2 to 0.2462, or 24.62% of the variation in MCBS reported income.

For African-Americans age 65 to 74, census tract and block group-based information did not significantly improve the ability to predict MCBS-based income. The increases in the R^2 values were small, and often not significantly different from zero at the $\alpha=0.05$ level. For African-Americans age 75+, the increases were both significant and relatively large; however, even the model with the highest explanatory power is not very robust. As column (5) shows, the model which includes both zip code and block group data--explains only 16.02% of the variation in MCBS-reported income.

Table 6

The Improvement in the Ability to Predict MCBS-based Income Using Zip Code-base Information in Conjunction with Census Tract-based and Census Block Group-based Information

	(1)	(2)	(3)	(4)	(5)	(6)
	Zip Code Alone		**Zip Code + Census Tract**		**Zip Code + Block Group**	
	R^2	**p**	**R^2**	**p**	**R^2**	**p**
White 65+	0.2051	0.0001	0.2276	0.0001	0.2189	0.0001
White 65-74	0.2321	0.0001	0.2571	0.0001	0.2462	0.0001
White 75+	0.0804	0.0001	0.0997	0.0001	0.0923	0.0003
Blacks 65+	0.0569	0.0012	0.0813	0.0301	0.0949	0.0066
Black 65-74	0.0290	0.0970	0.0350	0.4486	0.0428	0.2501
Black 75+	0.0244	0.1489	0.1276	0.0022	0.1602	0.0004

Note: The R^2 values in column (1) are the square of the Pearson correlation statistics in Table 4, and represent the percentage of variation in the responses to the MCBS that can be explained by variations the median income of the respondents zip code alone.

The p values in column (2) represent the probability that the R^2 is equal to zero.

The R^2 values in columns (3) and (5) represent the percentage of variation in the responses to the MCBS that can be explained using knowledge of the median income of the respondents zip code and census tract (3); and zip code and block group (5), respectively.

The p values in column (4) represent the probability that the improvement in the R^2 statistics from column (1) to column (3) is equal to zero.

The p values in column (6) represent the probability that the improvement in the R^2 statistics from column (1) to column (5) is equal to zero.

Data for all age/race categories are given in Appendix 2. As a guide to these data, Tables 7 and 8 show the results for the White 65-74 category. Table 7 shows a matrix which maps respondents according to the income category they reported to MCBS and the income category of the block group in which they live. Entries along the diagonal of this matrix represent a perfect match between information obtained in the survey, and information obtained through the census. For example, 29 Caucasian persons aged 65-74 reported incomes of less than $5,000 to MCBS. Of these, 3 reside in block groups which have median incomes of $5,000-$10,000, while 9 live in block groups with median incomes of $10,000-$15,000.

Table 7
Respondents by Income Category
MCBS vs. Block Group
White, 65-74 years

	Block Group Median Income											
MCBS	$0-$5	$5-10	$10-15	$15-20	$20-25	$25-30	$30-35	$35-40	$40-45	$45-50	$50+	Total
$0-$5	0	3	9	7	2	3	2	0	1	1	1	29
$5-10	1	15	23	25	31	11	4	5	3	0	8	126
$10-15	0	12	19	27	30	17	12	3	5	1	4	130
$15-20	0	6	16	13	26	18	14	6	8	1	6	114
$20-25	0	3	10	15	27	15	17	6	3	2	5	103
$25-30	0	1	14	10	12	13	9	9	3	3	5	79
$30-35	0	0	1	11	6	11	11	2	10	2	9	63
$35-40	0	0	3	4	10	2	6	3	7	2	5	42
$40-45	0	0	2	1	6	8	3	3	3	3	5	34
$45-50	0	0	0	3	1	2	1	3	2	3	6	21
$50+	0	0	2	3	14	15	10	10	13	9	35	111
Total	1	40	99	119	165	115	89	50	58	27	89	852

tau-b=0.342

Table 8
Respondents by Income Category
MCBS vs. Zip code
White, 65-74 years

	Zip Code Median Income										
MCBS	$0-$5	$5-10	$10-15	$15-20	$20-25	$25-30	$30-35	$35-40	$40-45	$45-50	$50+	Total
$0-$5	0	0	8	8	6	2	5	0	0	0	0	29
$5-10	0	1	17	32	49	14	5	6	1	1	0	126
$10-15	0	3	8	34	49	20	8	5	3	0	0	130
$15-20	0	1	7	25	49	14	10	6	1	1	0	114
$20-25	0	0	4	18	38	22	14	5	1	1	0	103
$25-30	0	0	1	10	36	13	7	6	4	2	0	79
$30-35	0	0	1	8	23	13	13	3	2	0	0	63
$35-40	0	0	0	5	13	11	2	5	4	2	0	42
$40-45	0	0	0	0	9	11	2	3	5	4	0	34
$45-50	0	0	0	2	4	3	6	2	1	3	0	21
$50+	0	0	0	8	30	19	21	18	7	8	0	111
Total	0	5	46	150	306	142	93	59	29	22	0	852

tau-b=0.352

CONCLUSION

Census tract-based and census block group-based income estimates are not better estimates of an individual's income than are zip code-based estimates. Combining zip code-based income estimates with either census tract or block group-based income estimates does not improve estimates of an individuals income by a practically significant amount.

APPENDIX 1

The Pareto median statistic is used to estimate the median of a categorical distribution. In this analysis, the census based data (zip code and block group income information) was available as catagorical data--i.e., the number of individuals in each of 9 income categories. To calculate the median income from these data we first identified the median income category. The median income category in a given zip code is the income category which contains the middle household, if all the households in the zip code were ranked by income. In the example below (Table A-1), the first row represents the number of households in each income category; the second row represents the sum of households with incomes less than or equal the income category for each column. There are a total of 101 households in the zip code, and 60 of have income of 25,000 or less. Thus the median income must fall between $15,000 and $25,000. The exact measure of the median is estimated by assuming that income is distributed uniformly within the median income category. If there are 21 households in the median income category (from the household ranked 41st in income to the household ranked 60th), then the 50th household (the middle household in a zip code with 101 households) is ranked 10th of the 20 households in the $15-25,000 category. Its income is estimated as half the distance from $15,000 to $25,000, or $20,000.

Table A-1
Example of Pareto Median Income Calculation

	<$5K	$5-10k	$10-15k	$15-25k	$25-35k	$35-50k	$50-75k	75-100K	>100 K
Number	10	14	16	21	18	8	7	5	2
Cumulative sum		24	40	61	79	87	94	99	101

Table A-2
SAS Code for Calculating Pareto Median

```
DATA ZIPTST; INFILE IN LRECL=345 LINESIZE=344;


 ARRAY INCW6 {9} INCW61-INCW69; * 9 income categories for whites aged 65-74;
 ARRAY INCW7 {9} INCW71-INCW79; * 9 income categories for whites aged 75+;
 ARRAY INCB6 {9} INCB61-INCB69; * 9 income catagories for blacks aged 65-74;
 ARRAY INCB7 {9} INCB71-INCB79; * 9 income catagories for blacks aged 75+;
 INPUT
  STATEFP $ 1-2
  CNTYFP  $ 3-5
  ZIP     $ 6-10
  FULLZIP $ 11
  MHHINC    12-20
  INCW6
  INCW7
  INCB6
  INCB7;

* minimum income for each income catagory;
array mininc{10} _TEMPORARY_
(0 5000 10000 15000 25000 35000 50000 75000 100000 1000001);



/* White 65-74 */

* halftot is the rank of the middle income household;
* med is a boolean which signals that the median income catagory has been reached;
  halftot=0;
  med=0;

  /* add up the population for entire catagory and take half */
  do i=1 to 9;
   halftot=halftot+incw6{i};
  end;
  halftot=halftot/2; * halftot is the rank of the middle income household

  if halftot=0 then do
    med=1;
    medincw6=0;
  end;
  else
```

```
do i=1 to 9 until (med=1);
 if halftot-incw6{i} > 0 then
    halftot=halftot-incw6{i};
 else do
    medincw6=halftot/incw6{i}*(mininc{i+1}-mininc{i})+mininc{i};
    med=1;
 end;
end;
```

APPENDIX 2

Data and results for all age/race combinations

Data and statistical summaries for the individual analyses of the correlation between MCBS based income measures and cenus-based estimates are presented below. For each age-race combination, the data and statistics for the zip code-based analysis is presented first, followed by the data and statistics for the block group and census tract-based analysis. The data for the discrete analyses (i.e., MCBS income catagory versus census based income catagory) are presented first, followed by the regression results for the continuous analysis (i.e., MCBS income versus census based median income). Finally, the multivariate regression analysis is presented. The first regression in each section tests the hypothesis that zip code data and census tract data are together better predictors than either is individually.The second regression tests the hypothesis that zip code data and block group data are together better predictors than either is individually.

The order of analyses presentated below is:

- I. Black 65-74.
    - A. MCBS vs Zip
        - 1. Discreate
        - 2. Continuous
    - B. MCBS vs Block Group
        - 1. Discreate
        - 2. Continuous
    - C. MCBS vs. Tract
        - 1. Discreate
        - 2. Continuous
    - D. Multivariate Regression Analysis
        - 1. Zip Code + Tract
        - 2. Zip Code + Block Group
- II. Black 75+
    - A. MCBS vs Zip
        - 1. Discreate
        - 2. Continuous
    - B. MCBS vs Block Group
        - 1. Discreate
        - 2. Continuous
    - C. MCBS vs. Tract
        - 1. Discreate
        - 2. Continuous
    - D. Multivariate Regression Analysis
        - 1. Zip Code + Tract
        - 2. Zip Code + Block Group

- III. Black 65+
  etc.

- IV. White 65-74

- V. White 75+

- VI. White 65+

```
The SAS System                  16:52 Thursday, January 4, 1996   1
                                               BLACK 65-74: MCBS V. ZIP                16:52 Thursday, January 4, 1996   2
                                                   TABLE OF R BY C
                      R         C(ZIP CODE INC CATAGORY)
                      Frequency      1        2        3        4        5        6        7        8   Total
                              1      0        3        7        2        1        0        1        1      15
                              2      2        6       13        6        0        1        1        0      29
                              3      0        1        3        7        3        0        0        1      15
                              4      0        2        5        6        0        0        1        0      14
                              5      0        1        6        2        0        1        2        0      12
                              6      0        0        1        1        0        0        2        0       4
                              7      0        0        1        1        0        0        0        0       2
                              8      0        0        2        0        0        0        1        0       3
                             10      0        0        0        1        0        0        0        0       1
                             11      0        0        0        1        0        0        0        0       1
                      Total          2       13       38       27        4        2        8        2      96

                                             STATISTICS FOR TABLE OF R BY C
                                  Statistic                                Value       ASE
                                  ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                                  Gamma                                    0.238       0.100
                                  Kendall's Tau-b                          0.187       0.079
                                  Stuart's Tau-c                           0.166       0.071
                                  Somers' D C|R                            0.177       0.075
                                  Somers' D R|C                            0.198       0.084
                                  Pearson Correlation                      0.188       0.097
                                  Spearman Correlation                     0.233       0.098
                                  Lambda Asymmetric C|R                    0.138       0.082
                                  Lambda Asymmetric R|C                    0.090       0.064
                                  Lambda Symmetric                         0.112       0.060
                                  Uncertainty Coefficient C|R              0.176       0.033
                                  Uncertainty Coefficient R|C              0.146       0.030
                                  Uncertainty Coefficient Symmetric        0.160       0.031
                                  Sample Size = 96
```

```
                                                      BLACK 65-74: MCBS V. ZIP                    16:52 Thursday, January 4, 1996   2
Model: MODEL1
Dependent Variable: RAVG
                                                        Analysis of Variance
                                                           Sum of         Mean
                                  Source          DF      Squares       Square      F Value       Prob>F
                                  Model            1  330386801.3  330386801.3        2.810       0.0970
                                  Error           94  11052222595 117576836.11
                                  C Total         95  11382609396
                                      Root MSE   10843.28530     R-square       0.0290
                                      Dep Mean   14171.45833     Adj R-sq       0.0187
                                      C.V.          76.51496
                                                         Parameter Estimates
                            Parameter      Standard    T for H0:                 Variable
           Variable  DF      Estimate         Error   Parameter=0    Prob > |T|     Label
           INTERCEP   1         10125  2655.3559617         3.813        0.0002  Intercept
           ZIPINC     1      0.252933    0.15088808         1.676        0.0970  MEDIAN INC IN ZIPCODE FOR GIVEN AGE/RACE
```

```
                                              BLACK 65-74: MCBS V. BLOCK GROUP                    16:52 Thursday, January 4, 1996   3
                                                  TABLE OF R BY BGC
R         BGC(BLKGRP INC CATAGORY)
Frequency       1        2        3        4        5        6        7        8        9       10       11    Total
       1        1        3        2        0        3        1        2        1        0        0        2       15
       2        3        9        8        4        2        0        1        2        0        0        0       29
       3        0        3        2        2        5        0        1        1        1        0        0       15
       4        0        2        1        4        1        2        1        1        0        1        1       14
       5        1        4        5        1        0        0        0        1        0        0        0       12
       6        1        0        1        0        1        0        0        0        0        1        0        4
       7        0        1        0        1        0        0        0        0        0        0        0        2
       8        0        0        1        1        0        0        0        0        0        0        1        3
      10        0        0        0        0        0        1        0        0        0        0        0        1
      11        0        0        0        0        0        0        0        0        0        0        1        1
Total           6       22       20       13       12        4        5        6        1        2        5       96

                                          STATISTICS FOR TABLE OF R BY BGC
                               Statistic                            Value        ASE
                               ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                               Gamma                                0.055      0.103
                               Kendall's Tau-b                      0.047      0.087
                               Stuart's Tau-c                       0.043      0.081
                               Somers' D C|R                        0.048      0.089
                               Somers' D R|C                        0.046      0.085
                               Pearson Correlation                  0.144      0.132
                               Spearman Correlation                 0.056      0.111
                               Lambda Asymmetric C|R                0.122      0.066
                               Lambda Asymmetric R|C                0.149      0.067
                               Lambda Symmetric                     0.135      0.055
                               Uncertainty Coefficient C|R          0.205      0.030
                               Uncertainty Coefficient R|C          0.228      0.032
                               Uncertainty Coefficient Symmetric    0.216      0.031
                               Sample Size = 96
```

```
                                                  BLACK 65-74: MCBS V. BLOCK GROUP                16:52 Thursday, January 4, 1996   4
Model: MODEL1
Dependent Variable: RAVG
                                                        Analysis of Variance
                                                           Sum of         Mean
                                  Source          DF      Squares       Square      F Value       Prob>F
                                  Model            1  388190273.9  388190273.9        3.319       0.0717
                                  Error           94  10994419122 116961905.55
                                  C Total         95  11382609396
                                      Root MSE    10814.89277     R-square       0.0341
                                      Dep Mean    14171.45833     Adj R-sq       0.0238
                                      C.V.           76.31461
                                                         Parameter Estimates
                            Parameter        Standard    T for H0:                 Variable
           Variable  DF      Estimate           Error   Parameter=0   Prob > |T|     Label
           INTERCEP   1         11402    1878.5274298         6.070       0.0001   Intercept
           BGINC      1      0.144147      0.07912367         1.822       0.0717   MEDIAN INC IN BLKGRP FOR GIVEN AGE/RACE
```

```
                                    BLACK 65-74: MCBS V. TRACT                16:52 Thursday, January 4, 1996   5
                                            TABLE OF R BY TRC
R          TRC(TRACT INC CATAGORY)
Frequency       1        2        3        4        5        6        7        8        9       10       11    Total
        1       1        4        2        1        3        2        1        0        1        0        0       15
        2       1       11        8        7        1        0        0        1        0        0        0       29
        3       0        3        3        1        3        2        1        0        2        0        0       15
        4       0        1        7        2        0        2        0        1        0        1        0       14
        5       1        3        4        2        1        0        0        1        0        0        0       12
        6       1        0        0        0        1        1        0        0        1        0        0        4
        7       0        1        0        1        0        0        0        0        0        0        0        2
        8       0        0        1        1        0        0        0        0        0        0        1        3
       10       0        0        0        0        1        0        0        0        0        0        0        1
       11       0        0        0        0        1        0        0        0        0        0        0        1
Total           4       23       25       15       11        7        2        3        4        1        1       96

                                    STATISTICS FOR TABLE OF R BY TRC
                              Statistic                               Value       ASE
                              ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                              Gamma                                   0.128     0.101
                              Kendall's Tau-b                         0.108     0.085
                              Stuart's Tau-c                          0.098     0.078
                              Somers' D C|R                           0.108     0.086
                              Somers' D R|C                           0.107     0.085
                              Pearson Correlation                     0.160     0.103
                              Spearman Correlation                    0.134     0.107
                              Lambda Asymmetric C|R                   0.127     0.080
                              Lambda Asymmetric R|C                   0.134     0.050
                              Lambda Symmetric                        0.130     0.052
                              Uncertainty Coefficient C|R             0.216     0.031
                              Uncertainty Coefficient R|C             0.224     0.033
                              Uncertainty Coefficient Symmetric       0.220     0.031
                              Sample Size = 96
```

```
                                                     BLACK 65-74: MCBS V. TRACT                   16:52 Thursday, January 4, 1996   6
Model: MODEL1
Dependent Variable: RAVG
                                                        Analysis of Variance
                                                           Sum of         Mean
                                  Source          DF      Squares       Square      F Value       Prob>F
                                  Model            1 342293607.92 342293607.92        2.914       0.0911
                                  Error           94  11040315788 117450167.96
                                  C Total         95  11382609396
                                      Root MSE   10837.44287     R-square       0.0301
                                      Dep Mean   14171.45833     Adj R-sq       0.0198
                                      C.V.          76.47373
                                                         Parameter Estimates
                            Parameter      Standard    T for H0:                 Variable
           Variable  DF      Estimate         Error   Parameter=0    Prob > |T|     Label
           INTERCEP   1         10987  2168.5265915         5.067        0.0001  Intercept
           TRINC      1      0.183046    0.10722311         1.707        0.0911  MEDIAN INC IN TRACT FOR GIVEN AGE/RACE
```

```
                                        BLACK 65-74: MCBS V. ZIP + TRACT                 16:52 Thursday, January 4, 1996   7
Model: MODEL1
Dependent Variable: RAVG
                                                    Analysis of Variance
                                                       Sum of         Mean
                              Source             DF       Squares       Square       F Value       Prob>F
                              Model               2 398793272.33 199396636.17          1.688       0.1905
                              Error              93  10983816123 118105549.72
                              C Total            95  11382609396
                                  Root MSE    10867.63772      R-square       0.0350
                                  Dep Mean    14171.45833      Adj R-sq       0.0143
                                  C.V.           76.68680
                                                     Parameter Estimates
                         Parameter       Standard    T for H0:                      Variable
         Variable  DF     Estimate          Error   Parameter=0    Prob > |T|        Label
         INTERCEP   1  9907.823481  2676.6188895          3.702        0.0004   Intercept
         ZIPINC     1     0.144011    0.20821363          0.692        0.4909   MEDIAN INC IN ZIPCODE FOR GIVEN AGE/RACE
         TRINC      1     0.112665    0.14803919          0.761        0.4486   MEDIAN INC IN TRACT FOR GIVEN AGE/RACE
```

```
                                       BLACK 65-74: MCBS V. ZIP + BLOCK GROUP          16:52 Thursday, January 4, 1996   8
Model: MODEL1
Dependent Variable: RAVG
                                                     Analysis of Variance
                                                        Sum of         Mean
                              Source          DF       Squares       Square       F Value       Prob>F
                              Model            2 487287377.61 243643688.81          2.080       0.1307
                              Error           93  10895322018  117154000.2
                              C Total         95  11382609396
                                  Root MSE    10823.77015     R-square        0.0428
                                  Dep Mean    14171.45833     Adj R-sq        0.0222
                                  C.V.           76.37725
                                                     Parameter Estimates
                     Parameter       Standard     T for H0:                 Variable
   Variable  DF       Estimate          Error    Parameter=0    Prob > |T|    Label
   INTERCEP   1    9641.357596   2683.3634280          3.593        0.0005  Intercept
   ZIPINC     1       0.157809     0.17158563          0.920        0.3601  MEDIAN INC IN ZIPCODE FOR GIVEN AGE/RACE
   BGINC      1       0.104401     0.09021341          1.157        0.2501  MEDIAN INC IN BLKGRP FOR GIVEN AGE/RACE
```

```
                BLACK 75+: MCBS V. ZIP 16:52 Thursday, January 4, 1996   9
                            TABLE OF R BY C
R         C(ZIP CODE INC CATAGORY)
Frequency        1        2        3        4        5        6  Total
       1        1       18        2        0        0        1     22
       2        0       19       12        1        2        0     34
       3        0        8        4        0        0        1     13
       4        0        4        6        1        0        0     11
       5        0        2        2        0        0        0      4
       6        0        0        1        0        0        0      1
       8        0        0        1        0        0        0      1
      10        0        0        1        0        0        0      1
Total           1       51       29        2        2        2     87

                    STATISTICS FOR TABLE OF R BY C
        Statistic                            Value       ASE
        ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
        Gamma                                0.431       0.124
        Kendall's Tau-b                      0.282       0.084
        Stuart's Tau-c                       0.215       0.065
        Somers' D C|R                        0.242       0.072
        Somers' D R|C                        0.330       0.101
        Pearson Correlation                  0.175       0.085
        Spearman Correlation                 0.323       0.096
        Lambda Asymmetric C|R                0.139       0.093
        Lambda Asymmetric R|C                0.038       0.026
        Lambda Symmetric                     0.079       0.040
        Uncertainty Coefficient C|R          0.172       0.041
        Uncertainty Coefficient R|C          0.110       0.029
        Uncertainty Coefficient Symmetric    0.134       0.033
        Sample Size = 87
```

```
                                                       BLACK 75+: MCBS V. ZIP                     16:52 Thursday, January 4, 1996  10
Model: MODEL1
Dependent Variable: RAVG
                                                        Analysis of Variance
                                                           Sum of         Mean
                                  Source          DF      Squares       Square      F Value       Prob>F
                                  Model            1 127718992.12 127718992.12        2.122       0.1489
                                  Error           85 5115959168.8 60187754.927
                                  C Total         86 5243678160.9
                                      Root MSE    7758.07675     R-square       0.0244
                                      Dep Mean    9971.26437     Adj R-sq       0.0129
                                      C.V.          77.80434
                                                         Parameter Estimates
                            Parameter      Standard    T for H0:                 Variable
           Variable  DF      Estimate         Error   Parameter=0    Prob > |T|     Label
           INTERCEP   1   6796.555604  2332.6916932         2.914        0.0046  Intercept
           ZIPINC     1      0.308708    0.21192117         1.457        0.1489  MEDIAN INC IN ZIPCODE FOR GIVEN AGE/RACE
```

```
                                  BLACK 75+: MCBS V. BLOCK GROUP                    16:52 Thursday, January 4, 1996  11
                                     TABLE OF R BY BGC
R          BGC(BLKGRP INC CATAGORY)
Frequency         1         2         3         4         5         6         7         9        10    Total
        1         5        14         1         2         0         0         0         0         0       22
        2         3        13         6         1         7         3         0         1         0       34
        3         1         6         1         3         0         1         0         1         0       13
        4         1         3         3         2         1         0         1         0         0       11
        5         0         1         0         1         1         1         0         0         0        4
        6         0         0         1         0         0         0         0         0         0        1
        8         0         0         1         0         0         0         0         0         0        1
       10         0         0         0         0         0         0         0         0         1        1
Total            10        37        13         9         9         5         1         2         1       87

                                STATISTICS FOR TABLE OF R BY BGC
                      Statistic                                Value        ASE
                      ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                      Gamma                                    0.389        0.094
                      Kendall's Tau-b                          0.300        0.074
                      Stuart's Tau-c                           0.257        0.065
                      Somers' D C|R                            0.303        0.075
                      Somers' D R|C                            0.297        0.075
                      Pearson Correlation                      0.393        0.142
                      Spearman Correlation                     0.368        0.090
                      Lambda Asymmetric C|R                    0.060        0.034
                      Lambda Asymmetric R|C                    0.132        0.113
                      Lambda Symmetric                         0.097        0.062
                      Uncertainty Coefficient C|R              0.195        0.040
                      Uncertainty Coefficient R|C              0.215        0.044
                      Uncertainty Coefficient Symmetric        0.204        0.041
                      Sample Size = 87
```

```
                              BLACK 75+: MCBS V. BLOCK GROUP              16:52 Thursday, January 4, 1996  13
Model: MODEL1
Dependent Variable: RAVG
                                        Analysis of Variance
                                           Sum of         Mean
                     Source          DF        Squares       Square      F Value       Prob>F
                     Model            1 839395954.27 839395954.27       16.200       0.0001
                     Error           85 4404282206.7 51815084.784
                     C Total         86 5243678160.9
                         Root MSE    7198.26957     R-square       0.1601
                         Dep Mean    9971.26437     Adj R-sq       0.1502
                         C.V.          72.19014
                                         Parameter Estimates
                  Parameter       Standard    T for H0:                  Variable
Variable  DF       Estimate          Error   Parameter=0    Prob > |T|      Label
INTERCEP   1    5623.710332   1327.5276800         4.236        0.0001  Intercept
BGINC      1       0.330611     0.08214140         4.025        0.0001  MEDIAN INC IN BLKGRP FOR GIVEN AGE/RACE
```

```
                       BLACK 75+: MCBS V. TRACT              16:52 Thursday, January 4, 1996  14
                              TABLE OF R BY TRC
R         TRC(TRACT INC CATAGORY)
Frequency       1        2        3        4        5        6        7   Total
       1        1       13        5        2        0        1        0      22
       2        1       16        9        4        3        1        0      34
       3        0        8        1        2        1        0        1      13
       4        0        3        4        2        1        0        1      11
       5        0        2        0        2        0        0        0       4
       6        0        0        1        0        0        0        0       1
       8        0        0        1        0        0        0        0       1
      10        0        0        0        0        0        0        1       1
Total           2       42       21       12        5        2        3      87

                      STATISTICS FOR TABLE OF R BY TRC
             Statistic                             Value       ASE
             AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
             Gamma                                 0.274      0.112
             Kendall's Tau-b                       0.198      0.083
             Stuart's Tau-c                        0.165      0.070
             Somers' D C|R                         0.190      0.080
             Somers' D R|C                         0.207      0.087
             Pearson Correlation                   0.312      0.135
             Spearman Correlation                  0.239      0.100
             Lambda Asymmetric C|R                 0.089      0.067
             Lambda Asymmetric R|C                 0.019      0.019
             Lambda Symmetric                      0.051      0.035
             Uncertainty Coefficient C|R           0.140      0.036
             Uncertainty Coefficient R|C           0.128      0.032
             Uncertainty Coefficient Symmetric     0.134      0.034
             Sample Size = 87
```

```
                                                      BLACK 75+: MCBS V. TRACT                   16:52 Thursday, January 4, 1996  15
Model: MODEL1
Dependent Variable: RAVG
                                                        Analysis of Variance
                                                          Sum of         Mean
                                  Source          DF      Squares      Square      F Value      Prob>F
                                  Model            1 651832272.02 651832272.02      12.066      0.0008
                                  Error           85 4591845888.9  54021716.34
                                  C Total         86 5243678160.9
                                      Root MSE    7349.94669     R-square       0.1243
                                      Dep Mean    9971.26437     Adj R-sq       0.1140
                                      C.V.          73.71128
                                                         Parameter Estimates
                            Parameter      Standard    T for H0:                 Variable
           Variable  DF      Estimate         Error   Parameter=0    Prob > |T|     Label
           INTERCEP   1   4722.187658 1704.2374534         2.771        0.0069  Intercept
           TRINC      1      0.445778    0.12833192         3.474        0.0008  MEDIAN INC IN TRACT FOR GIVEN AGE/RACE
```

```
Model: MODEL1
Dependent Variable: RAVG
                                              Analysis of Variance
                                                 Sum of         Mean
                        Source          DF      Squares       Square      F Value       Prob>F
                        Model            2 669126703.91 334563351.95        6.143       0.0032
                        Error           84   4574551457 54458945.917
                        C Total         86 5243678160.9
                            Root MSE    7379.63047     R-square       0.1276
                            Dep Mean    9971.26437     Adj R-sq       0.1068
                            C.V.          74.00897
                                              Parameter Estimates
                      Parameter       Standard    T for H0:                  Variable
 Variable  DF          Estimate          Error   Parameter=0   Prob > |T|     Label
 INTERCEP   1       3758.573474   2419.0655624         1.554       0.1240   Intercept
 ZIPINC     1          0.118573     0.21040980         0.564       0.5746   MEDIAN INC IN ZIPCODE FOR GIVEN AGE/RACE
 TRINC      1          0.424057     0.13449192         3.153       0.0022   MEDIAN INC IN TRACT FOR GIVEN AGE/RACE
```

```
                                                BLACK 75+: MCBS V. ZIP + BLOCK GROUP              16:52 Thursday, January 4, 1996  17
Model: MODEL1
Dependent Variable: RAVG
                                                        Analysis of Variance
                                                           Sum of         Mean
                                  Source          DF      Squares       Square      F Value       Prob>F
                                  Model            2 840180000.93 420090000.47        8.014       0.0007
                                  Error           84   4403498160 52422597.143
                                  C Total         86 5243678160.9
                                      Root MSE    7240.34510     R-square       0.1602
                                      Dep Mean    9971.26437     Adj R-sq       0.1402
                                      C.V.          72.61211
                                                         Parameter Estimates
                            Parameter      Standard    T for H0:                 Variable
           Variable  DF      Estimate         Error   Parameter=0    Prob > |T|     Label
           INTERCEP   1   5836.387721  2192.5449478         2.662        0.0093  Intercept
           ZIPINC     1     -0.026623    0.21769294        -0.122        0.9030  MEDIAN INC IN ZIPCODE FOR GIVEN AGE/RACE
           BGINC      1      0.335258    0.09094066         3.687        0.0004  MEDIAN INC IN BLKGRP FOR GIVEN AGE/RACE
```

```
                        BLACK 65+: MCBS V. ZIP     16:52 Thursday, January 4, 1996  18
                                     TABLE OF R BY C
R         C(ZIP CODE INC CATAGORY)
Frequency        1        2        3        4        5        6        7        8    Total
       1         1       21        9        2        1        1        1        1       37
       2         2       25       25        7        2        1        1        0       63
       3         0        9        7        7        3        1        0        1       28
       4         0        6       11        7        0        0        1        0       25
       5         0        3        8        2        0        1        2        0       16
       6         0        0        2        1        0        0        2        0        5
       7         0        0        1        1        0        0        0        0        2
       8         0        0        3        0        0        0        1        0        4
      10         0        0        1        1        0        0        0        0        2
      11         0        0        0        1        0        0        0        0        1
Total            3       64       67       29        6        4        8        2      183

                             STATISTICS FOR TABLE OF R BY C
                 Statistic                            Value        ASE
                 ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                 Gamma                                0.352       0.071
                 Kendall's Tau-b                      0.269       0.056
                 Stuart's Tau-c                       0.231       0.048
                 Somers' D C|R                        0.256       0.053
                 Somers' D R|C                        0.283       0.059
                 Pearson Correlation                  0.254       0.071
                 Spearman Correlation                 0.327       0.067
                 Lambda Asymmetric C|R                0.129       0.081
                 Lambda Asymmetric R|C                0.025       0.025
                 Lambda Symmetric                     0.076       0.043
                 Uncertainty Coefficient C|R          0.123       0.023
                 Uncertainty Coefficient R|C          0.103       0.020
                 Uncertainty Coefficient Symmetric    0.112       0.021
                 Sample Size = 183
```

```
                                                         BLACK 65+: MCBS V. ZIP 16:52 Thursday, January 4, 1996  19
Model: MODEL1
Dependent Variable: RAVG
                                                        Analysis of Variance
                                                           Sum of         Mean
                                  Source          DF      Squares       Square      F Value      Prob>F
                                  Model            1    991332223    991332223       10.914      0.0012
                                  Error          181  16440107729 90829324.469
                                  C Total        182  17431439952
                                      Root MSE    9530.44199     R-square       0.0569
                                      Dep Mean   12174.64481     Adj R-sq       0.0517
                                      C.V.          78.28107
                                                         Parameter Estimates
                            Parameter      Standard    T for H0:                 Variable
           Variable  DF      Estimate         Error   Parameter=0    Prob > |T|     Label
           INTERCEP   1   7497.817652  1581.2619901         4.742        0.0001  Intercept
           ZIPINC     1      0.352148    0.10659290         3.304        0.0012  MEDIAN INC IN ZIPCODE FOR GIVEN AGE/RACE
```

```
                                               BLACK 65+: MCBS V. BLOCK GROUP                   16:52 Thursday, January 4, 1996  20
                                                  TABLE OF R BY BGC
R         BGC(BLKGRP INC CATAGORY)
Frequency        1        2        3        4        5        6        7        8        9       10      11  Total
       1        6       17        3        2        3        1        2        1        0        0        2      37
       2        6       22       14        5        9        3        1        2        1        0        0      63
       3        1        9        3        5        5        1        1        1        2        0        0      28
       4        1        5        4        6        2        2        2        1        0        1        1      25
       5        1        5        5        2        1        1        0        1        0        0        0      16
       6        1        0        2        0        1        0        0        0        0        1        0       5
       7        0        1        0        1        0        0        0        0        0        0        0       2
       8        0        0        2        1        0        0        0        0        0        0        1       4
      10        0        0        0        0        0        1        0        0        0        1        0       2
      11        0        0        0        0        0        0        0        0        0        0        1       1
Total          16       59       33       22       21        9        6        6        3        3        5     183

                                          STATISTICS FOR TABLE OF R BY BGC
                               Statistic                           Value        ASE
                               ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                               Gamma                               0.229       0.073
                               Kendall's Tau-b                     0.187       0.060
                               Stuart's Tau-c                      0.167       0.054
                               Somers' D C|R                       0.190       0.061
                               Somers' D R|C                       0.183       0.059
                               Pearson Correlation                 0.268       0.096
                               Spearman Correlation                0.234       0.074
                               Lambda Asymmetric C|R               0.056       0.032
                               Lambda Asymmetric R|C               0.050       0.036
                               Lambda Symmetric                    0.053       0.028
                               Uncertainty Coefficient C|R         0.118       0.022
                               Uncertainty Coefficient R|C         0.133       0.023
                               Uncertainty Coefficient Symmetric   0.125       0.022
                               Sample Size = 183
```

```
                                                   BLACK 65+: MCBS V. BLOCK GROUP                 16:52 Thursday, January 4, 1996  21
Model: MODEL1
Dependent Variable: RAVG
                                                        Analysis of Variance
                                                           Sum of         Mean
                                  Source          DF      Squares       Square      F Value      Prob>F
                                  Model            1 1458010016.5 1458010016.5       16.521      0.0001
                                  Error          181  15973429935 88250994.118
                                  C Total        182  17431439952
                                      Root MSE    9394.20003     R-square       0.0836
                                      Dep Mean   12174.64481     Adj R-sq       0.0786
                                      C.V.          77.16200
                                                         Parameter Estimates
                            Parameter      Standard    T for H0:                 Variable
           Variable  DF      Estimate         Error   Parameter=0    Prob > |T|     Label
           INTERCEP   1   8450.922195  1149.5821607         7.351        0.0001  Intercept
           BGINC      1      0.228036    0.05610268         4.065        0.0001  MEDIAN INC IN BLKGRP FOR GIVEN AGE/RACE
```

```
                                           BLACK 65+: MCBS V. TRACT                  16:52 Thursday, January 4, 1996  22
                                                  TABLE OF R BY TRC
R         TRC(TRACT INC CATAGORY)
Frequency         1        2        3        4        5        6        7        8        9       10       11    Total
        1        2       17        7        3        3        3        1        0        1        0        0        37
        2        2       27       17       11        4        1        0        1        0        0        0        63
        3        0       11        4        3        4        2        2        0        2        0        0        28
        4        0        4       11        4        1        2        1        1        0        1        0        25
        5        1        5        4        4        1        0        0        1        0        0        0        16
        6        1        0        1        0        1        1        0        0        1        0        0         5
        7        0        1        0        1        0        0        0        0        0        0        0         2
        8        0        0        2        1        0        0        0        0        0        0        1         4
       10        0        0        0        0        1        0        1        0        0        0        0         2
       11        0        0        0        0        1        0        0        0        0        0        0         1
Total            6       65       46       27       16        9        5        3        4        1        1       183

                                          STATISTICS FOR TABLE OF R BY TRC
                               Statistic                            Value        ASE
                               ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                               Gamma                                0.230        0.075
                               Kendall's Tau-b                      0.183        0.060
                               Stuart's Tau-c                       0.159        0.053
                               Somers' D C|R                        0.181        0.060
                               Somers' D R|C                        0.185        0.061
                               Pearson Correlation                  0.249        0.078
                               Spearman Correlation                 0.225        0.074
                               Lambda Asymmetric C|R                0.102        0.036
                               Lambda Asymmetric R|C                0.067        0.025
                               Lambda Symmetric                     0.084        0.021
                               Uncertainty Coefficient C|R          0.135        0.023
                               Uncertainty Coefficient R|C          0.135        0.023
                               Uncertainty Coefficient Symmetric    0.135        0.023
                               Sample Size = 183
```

```
                                        BLACK 65+: MCBS V. TRACT                16:52 Thursday, January 4, 1996  23
Model: MODEL1
Dependent Variable: RAVG
                                         Analysis of Variance
                                              Sum of         Mean
                        Source          DF   Squares        Square       F Value       Prob>F
                        Model            1 1301730427.9 1301730427.9      14.607       0.0002
                        Error          181  16129709524  89114417.26
                        C Total        182  17431439952
                            Root MSE    9440.04329     R-square       0.0747
                            Dep Mean   12174.64481     Adj R-sq       0.0696
                            C.V.          77.53855
                                          Parameter Estimates
                    Parameter       Standard    T for H0:                  Variable
 Variable  DF        Estimate          Error   Parameter=0    Prob > |T|     Label
 INTERCEP   1     7828.236630   1334.2526924         5.867        0.0001  Intercept
 TRINC      1        0.295199     0.07723763         3.822        0.0002  MEDIAN INC IN TRACT FOR GIVEN AGE/RACE
```

```
Model: MODEL1
Dependent Variable: RAVG
                                            Analysis of Variance
                                                Sum of         Mean
                       Source          DF      Squares       Square      F Value       Prob>F
                       Model            2 1416524012.8 708262006.41        7.961       0.0005
                       Error          180  16014915939 88971755.217
                       C Total        182  17431439952
                           Root MSE    9432.48404     R-square        0.0813
                           Dep Mean   12174.64481     Adj R-sq        0.0711
                           C.V.          77.47646
                                             Parameter Estimates
                     Parameter      Standard    T for H0:                  Variable
Variable  DF          Estimate         Error   Parameter=0    Prob > |T|     Label
INTERCEP   1       6835.639702  1594.0532454         4.288        0.0001   Intercept
ZIPINC     1          0.156982    0.13820271         1.136        0.2575   MEDIAN INC IN ZIPCODE FOR GIVEN AGE/RACE
TRINC      1          0.221015    0.10110119         2.186        0.0301   MEDIAN INC IN TRACT FOR GIVEN AGE/RACE
```

```
Model: MODEL1
Dependent Variable: RAVG
                                        Analysis of Variance
                                           Sum of         Mean
                    Source          DF    Squares       Square      F Value       Prob>F
                    Model            2 1653608085.6 826804042.82        9.433       0.0001
                    Error          180  15777831866 87654621.479
                    C Total        182  17431439952
                        Root MSE    9362.40468     R-square       0.0949
                        Dep Mean   12174.64481     Adj R-sq       0.0848
                        C.V.          76.90084
                                        Parameter Estimates
                    Parameter      Standard    T for H0:               Variable
Variable  DF         Estimate         Error   Parameter=0    Prob > |T|   Label
INTERCEP   1      6844.168061  1571.4782813         4.355        0.0001  Intercept
ZIPINC     1         0.181772    0.12168349         1.494        0.1370  MEDIAN INC IN ZIPCODE FOR GIVEN AGE/RACE
BGINC      1         0.178596    0.06497409         2.749        0.0066  MEDIAN INC IN BLKGRP FOR GIVEN AGE/RACE
```

```
                           WHITE 65-74: MCBS V. ZIP                    16:52 Thursday, January 4, 1996  26
                                 TABLE OF R BY C
R          C(ZIP CODE INC CATAGORY)
Frequency         2        3        4        5        6        7        8        9       10    Total
        1         0        8        8        6        2        5        0        0        0       29
        2         1       17       32       49       14        5        6        1        1      126
        3         3        8       34       49       20        8        5        3        0      130
        4         1        7       25       49       14       10        6        1        1      114
        5         0        4       18       38       22       14        5        1        1      103
        6         0        1       10       36       13        7        6        4        2       79
        7         0        1        8       23       13       13        3        2        0       63
        8         0        0        5       13       11        2        5        4        2       42
        9         0        0        0        9       11        2        3        5        4       34
       10         0        0        2        4        3        6        2        1        3       21
       11         0        0        8       30       19       21       18        7        8      111
Total             5       46      150      306      142       93       59       29       22      852

                           STATISTICS FOR TABLE OF R BY C
                     Statistic                            Value        ASE
                     ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                     Gamma                                0.370      0.028
                     Kendall's Tau-b                      0.311      0.024
                     Stuart's Tau-c                       0.293      0.023
                     Somers' D C|R                        0.294      0.023
                     Somers' D R|C                        0.329      0.025
                     Pearson Correlation                  0.404      0.030
                     Spearman Correlation                 0.395      0.030
                     Lambda Asymmetric C|R                0.011      0.012
                     Lambda Asymmetric R|C                0.068      0.020
                     Lambda Symmetric                     0.043      0.013
                     Uncertainty Coefficient C|R          0.076      0.008
                     Uncertainty Coefficient R|C          0.061      0.007
                     Uncertainty Coefficient Symmetric    0.068      0.008
                     Sample Size = 852
```

```
                                          WHITE 65-74: MCBS V. ZIP       16:52 Thursday, January 4, 1996  27
Model: MODEL1
Dependent Variable: RAVG
                                         Analysis of Variance
                                            Sum of         Mean
                        Source          DF     Squares       Square      F Value       Prob>F
                        Model            1  80187930027  80187930027     256.982       0.0001
                        Error          850 265231490384 312037047.51
                        C Total        851 345419420411
                            Root MSE   17664.57040     R-square       0.2321
                            Dep Mean   27107.62911     Adj R-sq       0.2312
                            C.V.          65.16457
                                         Parameter Estimates
                     Parameter       Standard    T for H0:                 Variable
      Variable  DF    Estimate          Error   Parameter=0    Prob > |T|    Label
      INTERCEP   1  2269.949409  1663.3813000        1.365        0.1727  Intercept
      ZIPINC     1     0.926034    0.05776643       16.031        0.0001  MEDIAN INC IN ZIPCODE FOR GIVEN AGE/RACE
```

```
                                         WHITE 65-74: MCBS V. BLOCK GROUP                    16:52 Thursday, January 4, 1996  28
                                            TABLE OF R BY BGC
R          BGC(BLKGRP INC CATAGORY)
Frequency        1        2        3        4        5        6        7        8        9       10       11    Total
        1        0        3        9        7        2        3        2        0        1        1        1       29
        2        1       15       23       25       31       11        4        5        3        0        8      126
        3        0       12       19       27       30       17       12        3        5        1        4      130
        4        0        6       16       13       26       18       14        6        8        1        6      114
        5        0        3       10       15       27       15       17        6        3        2        5      103
        6        0        1       14       10       12       13        9        9        3        3        5       79
        7        0        0        1       11        6       11       11        2       10        2        9       63
        8        0        0        3        4       10        2        6        3        7        2        5       42
        9        0        0        2        1        6        8        3        3        3        3        5       34
       10        0        0        0        3        1        2        1        3        2        3        6       21
       11        0        0        2        3       14       15       10       10       13        9       35      111
Total            1       40       99      119      165      115       89       50       58       27       89      852

                                    STATISTICS FOR TABLE OF R BY BGC
                              Statistic                                 Value       ASE
                              ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                              Gamma                                     0.388      0.026
                              Kendall's Tau-b                           0.344      0.023
                              Stuart's Tau-c                            0.334      0.022
                              Somers' D C|R                             0.343      0.023
                              Somers' D R|C                             0.345      0.023
                              Pearson Correlation                       0.462      0.029
                              Spearman Correlation                      0.447      0.029
                              Lambda Asymmetric C|R                     0.061      0.016
                              Lambda Asymmetric R|C                     0.096      0.022
                              Lambda Symmetric                          0.079      0.015
                              Uncertainty Coefficient C|R               0.079      0.008
                              Uncertainty Coefficient R|C               0.077      0.008
                              Uncertainty Coefficient Symmetric         0.078      0.008
                              Sample Size = 852
```

```
Model: MODEL1
Dependent Variable: RAVG
                                       Analysis of Variance
                                          Sum of         Mean
                     Source         DF       Squares        Square       F Value       Prob>F
                     Model           1  41475443319  41475443319        115.989       0.0001
                     Error         850 303943977091 357581149.52
                     C Total       851 345419420411
                         Root MSE   18909.81622     R-square       0.1201
                         Dep Mean   27107.62911     Adj R-sq       0.1190
                         C.V.          69.75828
                                        Parameter Estimates
                    Parameter       Standard    T for H0:                    Variable
     Variable  DF    Estimate          Error   Parameter=0    Prob > |T|      Label
     INTERCEP   1       19623   950.08400501        20.654        0.0001   Intercept
     BGINC      1    0.244700     0.02272095        10.770        0.0001   MEDIAN INC IN BLKGRP FOR GIVEN AGE/RACE
```

```
                                      WHITE 65-74: MCBS V. TRACT               16:52 Thursday, January 4, 1996  30
                                              TABLE OF R BY TRC
R          TRC(TRACT INC CATAGORY)
Frequency        1        2        3        4        5        6        7        8        9       10       11    Total
        1        0        4        8        6        4        2        3        1        0        0        1       29
        2        1        5       23       31       37       13       10        2        1        2        1      126
        3        0        6       14       30       39       21       15        2        3        0        0      130
        4        0        2       10       14       44       21       10        5        5        1        2      114
        5        0        1        6       20       32       16       11        7        4        1        5      103
        6        0        1        2        7       29       14        7        7        8        1        3       79
        7        0        0        1        6       17        8       12       11        3        1        4       63
        8        0        0        3        4        7        8        4        5        3        1        7       42
        9        0        0        0        1        8        7        4        6        4        2        2       34
       10        0        0        2        1        3        2        3        3        0        3        4       21
       11        0        0        2        3       15       13       14       19       11       11       23      111
Total            1       19       71      123      235      125       93       68       42       23       52      852

                                         STATISTICS FOR TABLE OF R BY TRC
                               Statistic                             Value        ASE
                               ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                               Gamma                                 0.431      0.026
                               Kendall's Tau-b                       0.375      0.023
                               Stuart's Tau-c                        0.358      0.022
                               Somers' D C|R                         0.368      0.023
                               Somers' D R|C                         0.383      0.023
                               Pearson Correlation                   0.499      0.028
                               Spearman Correlation                  0.482      0.028
                               Lambda Asymmetric C|R                 0.023      0.014
                               Lambda Asymmetric R|C                 0.104      0.021
                               Lambda Symmetric                      0.066      0.014
                               Uncertainty Coefficient C|R           0.089      0.009
                               Uncertainty Coefficient R|C           0.082      0.008
                               Uncertainty Coefficient Symmetric     0.086      0.008
                               Sample Size = 852
```

```
                                WHITE 65-74: MCBS V. TRACT              16:52 Thursday, January 4, 1996  31
Model: MODEL1
Dependent Variable: RAVG
                                    Analysis of Variance
                                          Sum of         Mean
                      Source         DF      Squares       Square      F Value       Prob>F
                      Model           1  77173976378  77173976378      244.544       0.0001
                      Error         850 268245444033 315582875.33
                      C Total       851 345419420411
                          Root MSE    17764.65241     R-square         0.2234
                          Dep Mean    27107.62911     Adj R-sq         0.2225
                          C.V.           65.53377
                                     Parameter Estimates
                   Parameter      Standard    T for H0:                  Variable
Variable  DF        Estimate         Error   Parameter=0    Prob > |T|     Label
INTERCEP   1     7689.329172  1382.8714729         5.560        0.0001   Intercept
TRINC      1        0.694881    0.04443568        15.638        0.0001   MEDIAN INC IN TRACT FOR GIVEN AGE/RACE
```

```
                                WHITE 65-74: MCBS V. ZIP + TRACT             16:52 Thursday, January 4, 1996  32
Model: MODEL1
Dependent Variable: RAVG
                                            Analysis of Variance
                                               Sum of         Mean
                      Source          DF      Squares       Square       F Value       Prob>F
                      Model            2  88811179045  44405589522       146.918       0.0001
                      Error          849 256608241366 302247634.12
                      C Total        851 345419420411
                          Root MSE   17385.27061      R-square        0.2571
                          Dep Mean   27107.62911      Adj R-sq        0.2554
                          C.V.          64.13424
                                            Parameter Estimates
                    Parameter      Standard    T for H0:                 Variable
Variable  DF         Estimate         Error   Parameter=0    Prob > |T|    Label
INTERCEP   1      1962.458627  1638.0929450         1.198        0.2312  Intercept
ZIPINC     1         0.556046    0.08961229         6.205        0.0001  MEDIAN INC IN ZIPCODE FOR GIVEN AGE/RACE
TRINC      1         0.366121    0.06854412         5.341        0.0001  MEDIAN INC IN TRACT FOR GIVEN AGE/RACE
```

```
Model: MODEL1
Dependent Variable: RAVG
                                          Analysis of Variance
                                             Sum of          Mean
                       Source          DF     Squares        Square       F Value       Prob>F
                       Model            2  85027923849  42513961925       138.616       0.0001
                       Error          849 260391496562 306703765.09
                       C Total        851 345419420411
                           Root MSE    17512.95992     R-square        0.2462
                           Dep Mean    27107.62911     Adj R-sq        0.2444
                           C.V.           64.60528
                                          Parameter Estimates
                  Parameter       Standard    T for H0:                  Variable
Variable  DF       Estimate          Error   Parameter=0    Prob > |T|     Label
INTERCEP   1    2896.663409   1656.6340497         1.749        0.0807  Intercept
ZIPINC     1       0.792037     0.06646589        11.916        0.0001  MEDIAN INC IN ZIPCODE FOR GIVEN AGE/RACE
BGINC      1       0.097013     0.02442112         3.972        0.0001  MEDIAN INC IN BLKGRP FOR GIVEN AGE/RACE
```

```
TABLE OF R BY C
                  R          C(ZIP CODE INC CATAGORY)
                  Frequency       2        3        4        5        6        7        8        9       10    Total
                          1       4       36       24        6        1        1        3        1        0       76
                          2      27      129       76       22        8        4        0        0        0      266
                          3      18       99       65       29        8        5        2        1        2      229
                          4       4       61       36       11        5        3        2        1        1      124
                          5       3       34       35       13        3        2        0        2        1       93
                          6       0       27       18       12        3        5        2        0        0       67
                          7       1       19       12       12        6        1        2        0        0       53
                          8       2        3        6        7        4        3        4        0        2       31
                          9       1        3        6        4        2        2        0        1        0       19
                         10       1        3        2        5        1        1        1        0        0       14
                         11       0       13       13       15        6        3        1        0        1       52
                  Total          61      427      293      136       47       30       17        6        7     1024

                                         STATISTICS FOR TABLE OF R BY C
                                Statistic                                Value        ASE
                                ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                                Gamma                                    0.259      0.030
                                Kendall's Tau-b                          0.203      0.024
                                Stuart's Tau-c                           0.178      0.022
                                Somers' D C|R                            0.188      0.023
                                Somers' D R|C                            0.220      0.026
                                Pearson Correlation                      0.269      0.032
                                Spearman Correlation                     0.253      0.030
                                Lambda Asymmetric C|R                    0.020      0.018
                                Lambda Asymmetric R|C                    0.021      0.011
                                Lambda Symmetric                         0.021      0.010
                                Uncertainty Coefficient C|R              0.054      0.007
                                Uncertainty Coefficient R|C              0.040      0.006
                                Uncertainty Coefficient Symmetric        0.046      0.006
                                Sample Size = 1024
```

```
                                 WHITE 75+: MCBS V. ZIP                 16:52 Thursday, January 4, 1996  35
Model: MODEL1
Dependent Variable: RAVG
                                                Analysis of Variance
                                                  Sum of         Mean
                          Source          DF     Squares       Square       F Value       Prob>F
                          Model            1  20537501261  20537501261       89.407       0.0001
                          Error         1022 234760674950 229707118.35
                          C Total       1023 255298176211
                              Root MSE   15156.09179     R-square        0.0804
                              Dep Mean   18759.57031     Adj R-sq        0.0795
                              C.V.          80.79125
                                                 Parameter Estimates
                       Parameter      Standard    T for H0:                   Variable
        Variable  DF    Estimate         Error   Parameter=0    Prob > |T|     Label
        INTERCEP   1  7952.607573  1237.1729810        6.428        0.0001  Intercept
        ZIPINC     1     0.621178    0.06569461        9.456        0.0001  MEDIAN INC IN ZIPCODE FOR GIVEN AGE/RACE
```

```
WHITE 75+: MCBS V. BLOCK GROUP                  16:52 Thursday, January 4, 1996  37

                                              TABLE OF R BY BGC
R          BGC(BLKGRP INC CATAGORY)
Frequency       1       2       3       4       5       6       7       8       9      10      11   Total
        1       2      17      19      10      13       6       4       0       2       0       3      76
        2       3      78      60      41      30      24       9       8       6       0       7     266
        3       6      50      51      50      31      11       9       6       4       2       9     229
        4       5      21      31      19      16      11       6       5       6       2       2     124
        5       1      15      23      13      19       7       9       1       1       0       4      93
        6       0       8      14      15      12       8       3       3       1       0       3      67
        7       0      10       4      10      10       3       7       3       2       0       4      53
        8       0       2       6       3       6       2       1       5       4       0       2      31
        9       0       0       3       3       3       4       2       1       2       0       1      19
       10       0       3       0       0       2       2       3       2       0       0       2      14
       11       0       0       9       6       9       8       5       3       2       0      10      52
Total          17     204     220     170     151      86      58      37      30       4      47    1024

                                   STATISTICS FOR TABLE OF R BY BGC
                              Statistic                            Value          ASE
                              ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                              Gamma                                0.214        0.027
                              Kendall's Tau-b                      0.182        0.023
                              Stuart's Tau-c                       0.170        0.022
                              Somers' D C|R                        0.183        0.024
                              Somers' D R|C                        0.182        0.023
                              Pearson Correlation                  0.271        0.033
                              Spearman Correlation                 0.236        0.030
                              Lambda Asymmetric C|R                0.037        0.018
                              Lambda Asymmetric R|C                0.024        0.017
                              Lambda Symmetric                     0.031        0.013
                              Uncertainty Coefficient C|R          0.044        0.006
                              Uncertainty Coefficient R|C          0.044        0.005
                              Uncertainty Coefficient Symmetric    0.044        0.005
                              Sample Size = 1024
```

```
WHITE 75+: MCBS V. BLOCK GROUP              16:52 Thursday, January 4, 1996  37
Model: MODEL1
Dependent Variable: RAVG
                                              Analysis of Variance
                                                   Sum of         Mean
                              Source          DF      Squares       Square       F Value       Prob>F
                              Model            1  10632634547  10632634547        44.414       0.0001
                              Error         1022 244665541664 239398768.75
                              C Total       1023 255298176211
                                  Root MSE     15472.51656     R-square       0.0416
                                  Dep Mean     18759.57031     Adj R-sq       0.0407
                                  C.V.            82.47799
                                               Parameter Estimates
                        Parameter      Standard    T for H0:                 Variable
         Variable  DF    Estimate         Error   Parameter=0    Prob > |T|    Label
         INTERCEP   1       15002  742.78744208        20.197        0.0001  Intercept
         BGINC      1    0.182161    0.02733348         6.664        0.0001  MEDIAN INC IN BLKGRP FOR GIVEN AGE/RACE
```

```
                                 WHITE 75+: MCBS V. TRACT          16:52 Thursday, January 4, 1996  38
                                        TABLE OF R BY TRC
R         TRC(TRACT INC CATAGORY)
Frequency        1        2        3        4        5        6        7        8        9       10       11   Total
        1        0        9       30       18        9        5        1        0        2        0        2      76
        2        0       52       92       65       29       16        7        2        2        0        1     266
        3        0       33       70       64       31       12        6        4        3        0        6     229
        4        0       10       48       23       20        7        9        3        1        3        0     124
        5        1       13       27       26       13        5        4        0        2        1        1      93
        6        0        4       19       19       11       10        2        0        2        0        0      67
        7        0        2       11       14       11        5        5        3        0        1        1      53
        8        0        2        4        5        7        1        4        2        5        1        0      31
        9        0        0        3        4        3        2        2        3        0        1        1      19
       10        0        2        1        2        1        3        2        1        0        1        1      14
       11        0        1        6        9       12        5       12        0        4        1        2      52
Total            1      128      311      249      147       71       54       18       21        9       15    1024

                              STATISTICS FOR TABLE OF R BY TRC
                          Statistic                             Value       ASE
                          ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                          Gamma                                 0.253       0.028
                          Kendall's Tau-b                       0.209       0.024
                          Stuart's Tau-c                        0.190       0.022
                          Somers' D C|R                         0.204       0.023
                          Somers' D R|C                         0.214       0.024
                          Pearson Correlation                   0.304       0.033
                          Spearman Correlation                  0.267       0.030
                          Lambda Asymmetric C|R                 0.021       0.011
                          Lambda Asymmetric R|C                 0.028       0.013
                          Lambda Symmetric                      0.024       0.009
                          Uncertainty Coefficient C|R           0.057       0.007
                          Uncertainty Coefficient R|C           0.050       0.006
                          Uncertainty Coefficient Symmetric     0.053       0.007
                          Sample Size = 1024
```

```
Model: MODEL1
Dependent Variable: RAVG
                                                        Analysis of Variance
                                                          Sum of         Mean
                                  Source         DF      Squares       Square      F Value       Prob>F
                                  Model           1  21748756550  21748756550       95.171       0.0001
                                  Error        1022 233549419660 228521937.05
                                  C Total      1023 255298176211
                                      Root MSE   15116.94205    R-square       0.0852
                                      Dep Mean   18759.57031    Adj R-sq       0.0843
                                      C.V.          80.58256
                                                        Parameter Estimates
                           Parameter       Standard    T for H0:                 Variable
           Variable  DF     Estimate          Error  Parameter=0   Prob > |T|      Label
           INTERCEP   1  9780.759149   1034.5332507        9.454       0.0001   Intercept
           TRINC      1     0.478770     0.04907647        9.756       0.0001   MEDIAN INC IN TRACT FOR GIVEN AGE/RACE
```

```
                                     WHITE 75+: MCBS V. ZIP + TRACT                 16:52 Thursday, January 4, 1996  40
Model: MODEL1
Dependent Variable: RAVG
                                           Analysis of Variance
                                              Sum of          Mean
                          Source          DF       Squares        Square       F Value       Prob>F
                          Model            2  25456756564  12728378282        56.542       0.0001
                          Error         1021 229841419647 225114025.12
                          C Total       1023 255298176211
                              Root MSE   15003.80036     R-square       0.0997
                              Dep Mean   18759.57031     Adj R-sq       0.0980
                              C.V.          79.97945
                                            Parameter Estimates
                        Parameter      Standard    T for H0:                 Variable
        Variable  DF     Estimate         Error   Parameter=0   Prob > |T|     Label
        INTERCEP   1  6929.345645  1244.1493576         5.570       0.0001  Intercept
        ZIPINC     1     0.352341    0.08681502         4.059       0.0001  MEDIAN INC IN ZIPCODE FOR GIVEN AGE/RACE
        TRINC      1     0.303956    0.06502221         4.675       0.0001  MEDIAN INC IN TRACT FOR GIVEN AGE/RACE
```

```
                                      WHITE 75+: MCBS V. ZIP + BLOCK GROUP          16:52 Thursday, January 4, 1996  41
Model: MODEL1
Oependent Variable: RAVG
                                                 Analysis of Variance
                                                    Sum of         Mean
                          Source           DF      Squares       Square       F Value       Prob>F
                          Model             2  23566602171  11783301086        51.917       0.0001
                          Error          1021 231731574040 226965302.68
                          C Total        1023 255298176211
                              Root MSE   15065.36766       R-square       0.0923
                              Oep Mean   18759.57031       Adj R-sq       0.0905
                              C.V.          80.30764
                                                  Parameter Estimates
                    Parameter       Standard    T for H0:                   Variable
Variable  DF         Estimate          Error   Parameter=0    Prob > |T|      Label
INTERCEP   1      7410.346202   1238.6928728         5.982        0.0001  Intercept
ZIPINC     1         0.528700     0.07003626         7.549        0.0001  MEOIAN INC IN ZIPCODE FOR GIVEN AGE/RACE
BGINC      1         0.104278     0.02854397         3.653        0.0003  MEOIAN INC IN BLKGRP FOR GIVEN AGE/RACE
```

```
                        WHITE 65+: MCBS V. ZIP CODE          16:52 Thursday, January 4, 1996  42
                                    TABLE OF R BY C
R          C(ZIP CODE INC CATAGORY)
Frequency        2        3        4        5        6        7        8        9       10    Total
        1        4       44       32       12        3        6        3        1        0      105
        2       28      146      108       71       22        9        6        1        1      392
        3       21      107       99       78       28       13        7        4        2      359
        4        5       68       61       60       19       13        8        2        2      238
        5        3       38       53       51       25       16        5        3        2      196
        6        0       28       28       48       16       12        8        4        2      146
        7        1       20       20       35       19       14        5        2        0      116
        8        2        3       11       20       15        5        9        4        4       73
        9        1        3        6       13       13        4        3        6        4       53
       10        1        3        4        9        4        7        3        1        3       35
       11        0       13       21       45       25       24       19        7        9      163
Total           66      473      443      442      189      123       76       35       29     1876

                              STATISTICS FOR TABLE OF R BY C
                      Statistic                                  Value       ASE
                      ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                      Gamma                                      0.368     0.019
                      Kendall's Tau-b                            0.311     0.016
                      Stuart's Tau-c                             0.293     0.015
                      Somers' D C|R                              0.299     0.016
                      Somers' D R|C                              0.322     0.017
                      Pearson Correlation                        0.404     0.021
                      Spearman Correlation                       0.396     0.020
                      Lambda Asymmetric C|R                      0.082     0.012
                      Lambda Asymmetric R|C                      0.037     0.011
                      Lambda Symmetric                           0.059     0.008
                      Uncertainty Coefficient C|R                0.060     0.005
                      Uncertainty Coefficient R|C                0.050     0.005
                      Uncertainty Coefficient Symmetric          0.054     0.005
                      Sample Size = 1876
```

```
Model: MODEL1
Dependent Variable: RAVG
                                              Analysis of Variance
                                                 Sum of         Mean
                          Source          DF    Squares        Square       F Value       Prob>F
                          Model            1 129823422798 129823422798      483.384       0.0001
                          Error         1874 503304075662  268572078.8
                          C Total       1875 633127498459
                              Root MSE   16388.16887      R-square        0.2051
                              Dep Mean   22550.90618      Adj R-sq        0.2046
                              C.V.          72.67189
                                               Parameter Estimates
                    Parameter       Standard    T for H0:                  Variable
      Variable  DF   Estimate          Error   Parameter=0    Prob > |T|     Label
      INTERCEP   1  4538.810764 902.40671553         5.030        0.0001  Intercept
      ZIPINC     1     0.830911   0.03779275        21.986        0.0001  MEDIAN INC IN ZIPCODE FOR GIVEN AGE/RACE
```

```
                               WHITE 65+: MCBS V. BLOCK GROUP                 16:52 Thursday, January 4, 1996  44
                                  TABLE OF R BY BGC
R          BGC(BLKGRP INC CATAGORY)
Frequency       1        2        3        4        5        6        7        8        9       10       11    Total
        1       2       20       28       17       15        9        6        0        3        1        4      105
        2       4       93       83       66       61       35       13       13        9        0       15      392
        3       6       62       70       77       61       28       21        9        9        3       13      359
        4       5       27       47       32       42       29       20       11       14        3        8      238
        5       1       18       33       28       46       22       26        7        4        2        9      196
        6       0        9       28       25       24       21       12       12        4        3        8      146
        7       0       10        5       21       16       14       18        5       12        2       13      116
        8       0        2        9        7       16        4        7        8       11        2        7       73
        9       0        0        5        4        9       12        5        4        5        3        6       53
       10       0        3        0        3        3        4        4        5        2        3        8       35
       11       0        0       11        9       23       23       15       13       15        9       45      163
Total          18      244      319      289      316      201      147       87       88       31      136     1876

                         STATISTICS FOR TABLE OF R BY BGC
                    Statistic                              Value       ASE
                    ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                    Gamma                                  0.335     0.018
                    Kendall's Tau-b                        0.294     0.016
                    Stuart's Tau-c                         0.282     0.016
                    Somers' D C|R                          0.295     0.016
                    Somers' D R|C                          0.293     0.016
                    Pearson Correlation                    0.414     0.021
                    Spearman Correlation                   0.383     0.020
                    Lambda Asymmetric C|R                  0.066     0.014
                    Lambda Asymmetric R|C                  0.048     0.011
                    Lambda Symmetric                       0.057     0.010
                    Uncertainty Coefficient C|R            0.057     0.005
                    Uncertainty Coefficient R|C            0.057     0.005
                    Uncertainty Coefficient Symmetric      0.057     0.005
                    Sample Size = 1876
```

```
                                                   WHITE 65+: MCBS V. BLOCK GROUP                 16:52 Thursday, January 4, 1996  45
Model: MODEL1
Dependent Variable: RAVG
                                                        Analysis of Variance
                                                           Sum of         Mean
                                  Source          DF      Squares       Square      F Value       Prob>F
                                  Model            1  67063810598  67063810598      222.020       0.0001
                                  Error         1874 566063687861 302061733.12
                                  C Total       1875 633127498459
                                      Root MSE   17379.92328     R-square       0.1059
                                      Dep Mean   22550.90618     Adj R-sq       0.1054
                                      C.V.          77.06973
                                                         Parameter Estimates
                            Parameter      Standard    T for H0:                 Variable
           Variable  DF      Estimate         Error   Parameter=0    Prob > |T|     Label
           INTERCEP   1         16222  584.30765356        27.763        0.0001  Intercept
           BGINC      1      0.251626    0.01688723        14.900        0.0001  MEDIAN INC IN BLKGRP FOR GIVEN AGE/RACE
```

```
                              WHITE 65+: MCBS V. TRACT              16:52 Thursday, January 4, 1996  46
                                  TABLE OF R BY TRC
R          TRC(TRACT INC CATAGORY)
Frequency        1        2        3        4        5        6        7        8        9       10       11    Total
       1         0       13       38       24       13        7        4        1        2        0        3      105
       2         1       57      115       96       66       29       17        4        3        2        2      392
       3         0       39       84       94       70       33       21        6        6        0        6      359
       4         0       12       58       37       64       28       19        8        6        4        2      238
       5         1       14       33       46       45       21       15        7        6        2        6      196
       6         0        5       21       26       40       24        9        7       10        1        3      146
       7         0        2       12       20       28       13       17       14        3        2        5      116
       8         0        2        7        9       14        9        8        7        8        2        7       73
       9         0        0        3        5       11        9        6        9        4        3        3       53
      10         0        2        3        3        4        5        5        4        0        4        5       35
      11         0        1        8       12       27       18       26       19       15       12       25      163
Total            2      147      382      372      382      196      147       86       63       32       67     1876

                              STATISTICS FOR TABLE OF R BY TRC
                 Statistic                               Value       ASE
                 ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                 Gamma                                   0.382       0.018
                 Kendall's Tau-b                         0.330       0.016
                 Stuart's Tau-c                          0.312       0.015
                 Somers' D C|R                           0.326       0.016
                 Somers' D R|C                           0.334       0.016
                 Pearson Correlation                     0.457       0.021
                 Spearman Correlation                    0.425       0.020
                 Lambda Asymmetric C|R                   0.067       0.015
                 Lambda Asymmetric R|C                   0.052       0.012
                 Lambda Symmetric                        0.059       0.010
                 Uncertainty Coefficient C|R             0.065       0.005
                 Uncertainty Coefficient R|C             0.061       0.005
                 Uncertainty Coefficient Symmetric       0.063       0.005
                 Sample Size = 1876
```

```
                                        WHITE 65+: MCBS V. TRACT              16:52 Thursday, January 4, 1996  47
Model: MODEL1
Dependent Variable: RAVG
                                          Analysis of Variance
                                             Sum of         Mean
                        Source          DF      Squares       Square      F Value       Prob>F
                        Model            1 125611683642 125611683642      463.821       0.0001
                        Error         1874 507515814817 270819538.32
                        C Total       1875 633127498459
                            Root MSE   16456.59559     R-square       0.1984
                            Dep Mean   22550.90618     Adj R-sq       0.1980
                            C.V.          72.97532
                                           Parameter Estimates
                      Parameter      Standard    T for H0:                 Variable
      Variable  DF     Estimate         Error   Parameter=0    Prob > |T|    Label
      INTERCEP   1  7563.947424  792.85452164         9.540        0.0001  Intercept
      TRINC      1     0.653652    0.03035092        21.536        0.0001  MEDIAN INC IN TRACT FOR GIVEN AGE/RACE
```

```
                                  WHITE 65+: MCBS V. ZIP + TRACT              16:52 Thursday, January 4, 1996  48
Model: MODEL1
Dependent Variable: RAVG
                                                 Analysis of Variance
                                                    Sum of         Mean
                        Source          DF         Squares       Square          F Value        Prob>F
                        Model            2 144099791206  72049895603          275.955        0.0001
                        Error         1873 489027707253  261093276.7
                        C Total       1875 633127498459
                            Root MSE    16158.38100       R-square         0.2276
                            Dep Mean    22550.90618       Adj R-sq         0.2268
                            C.V.           71.65291
                                                 Parameter Estimates
                       Parameter        Standard     T for H0:                   Variable
      Variable  DF      Estimate           Error    Parameter=0    Prob > |T|      Label
      INTERCEP   1   3856.234170  894.52903697           4.311        0.0001   Intercept
      ZIPINC     1      0.494689    0.05878733           8.415        0.0001   MEDIAN INC IN ZIPCODE FOR GIVEN AGE/RACE
      TRINC      1      0.347655    0.04701512           7.395        0.0001   MEDIAN INC IN TRACT FOR GIVEN AGE/RACE
```

```
Model: MODEL1
Dependent Variable: RAVG
                                     Analysis of Variance
                                          Sum of         Mean
                  Source           DF    Squares        Square       F Value      Prob>F
                  Model             2 138565249469  69282624734      262.386      0.0001
                  Error          1873 494562248991 264048184.19
                  C Total        1875 633127498459
                      Root MSE    16249.55951     R-square       0.2189
                      Dep Mean    22550.90618     Adj R-sq       0.2180
                      C.V.           72.05724
                                      Parameter Estimates
                   Parameter       Standard    T for H0:                 Variable
Variable  DF        Estimate          Error   Parameter=0   Prob > |T|     Label
INTERCEP   1     4560.842108   894.78244970         5.097       0.0001  Intercept
ZIPINC     1        0.708746     0.04307000        16.456       0.0001  MEDIAN INC IN ZIPCODE FOR GIVEN AGE/RACE
BGINC      1        0.104416     0.01814711         5.754       0.0001  MEDIAN INC IN BLKGRP FOR GIVEN AGE/RACE
```

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